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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,720	08/09/2002	Yoshiyuki Nakano	086142-0533	4229

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WASHINGTON, DC 20007

EXAMINER

SPISICH, GEORGE D

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,720

Applicant(s)

NAKANO ET AL.

Examiner

George D. Spisich

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2&4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to because in Fig. 6B, there is a reference line (at the top of the figure) and no reference numeral associated with this line. It appears that this element should be 16. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to at least claims 1 and 9, it is unclear to claim that the tubular member comprises a linear sliding portion. This implies that the tubular member itself has a portion that slides. This is not accurate. Examiner suggests claiming this portion

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as a "linear portion". Furthermore, in at least claim 2 this same portion is now claimed as a "piston sliding portion". Once the portion name is determined, that name should be used in later references to that same feature to avoid confusion.

With respect to claims 2-4 when claiming that the tubular member "is bent". This is a method limitation and is not given weight in an apparatus claim. The orientation of the particular bend is what is necessary to meet the limitations of each particular claim. For instance, instead of "is acutely bent", it should be written "has an acute bend". Furthermore, it is unclear that if there is claimed a member that is "bent acutely", it is unclear if the straight tubular member is bent less than 90 degrees (acute). This would result in a tubular member that has an obtuse angle between the two portions of the tubular member and would be the opposite of what is intended to be claimed.

With respect to claim 4, it is inaccurate to claim that the tubular member is "bent at right angles". This implies that the tubular member has a plurality of right angle bends. This is not true and not believed to be the intended structure claimed in this claim.

With respect to claim 3 and claim 5, it is unclear to claim that the gas generator accommodating portion extends "toward the side opposite". It would be proper to claim this detail as - - away - -.

Claim 6, on lines 1 and 2, "portion or extends in parallel" is unclear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 7-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuge et al. (USPN 4,237,690) (provided in Applicant's IDS).

Tsuge et al. disclose a pretensioner for increasing the restraint force of a seat belt on an occupant comprising a connecting member (5) connected to a piston (2), the piston configured to be moved by pressure of a gas generated by a gas generator, a “bent” tubular member comprising a linear sliding portion in which the piston is slidably fitted and a gas generator accommodating portion in which the gas generator is accommodated. The gas generator is located offset from the axis of movement of the piston. The connecting member is inherently operatively connected to the seat belt and buckle so that when the piston moves the connecting member pulls the seat belt/buckle.

The tubular member of Tsuge et al. is “bent obtusely”.

The tubular member includes a hole (13) bored coaxially with the piston and the connecting member being positioned to pass through the hole.

- The piston of Tsuge et al. has movement within the linear sliding portion limited to a single direction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuge et al. (USPN 4,237,690) in view of DE 37 17 117 A1 (provided in Applicant's IDS).

Tsuge et al. has been discussed in the previous rejection.

However, Tsuge et al. does not disclose the "bending" relationships with the gas accommodating portion of the tubular member and the linear sliding portion of the tubular member. Namely, the right angle relationship, and the parallel relationships that extend toward and away from the linear sliding portion.

DE '117 shows a right angle relationship (as seen in Figure 1), a parallel relationship extending towards the linear sliding portion relationship (as seen in Figure 2) and a parallel relationship extending away from the linear sliding portion relationship (as seen in Figure 3) between the gas generator accommodating portion and the linear sliding portion of the tubular member.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the obtuse angle relationship of Tsuge et al. with any of

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the relationships taught by DE '117 for allowing for the flexibility to provide a gas generator pretensioner in a variety of orientations in the confined spaces of a vehicle.

Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fohl (USPN 5,411,291)

Fohl discloses a pretensioner having a tubular member having a linear piston sliding portion and a gas generator (12) that is accommodated in an "acutely bent" portion of the tubular member. Fohl discloses a connecting member (22) attached to a piston (161) slidably mounted in the linear sliding portion and a hole at the end of the tubular member between the gas generator and the piston through which the connecting member passes. The connecting member is inherently connected to a seat belt and buckle.

However, the tubular member of Fohl is shown as two pieces that are connected to each other (by a screw and thread connection) to form the pretension with a tubular arrangement having an acute bend.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the two portions integral since it has been held that forming in one piece and article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuge et al. in view of Wier (USPN 5,908,222) (provided with Applicant's IDS, though not listed on form-1449).

Tsuge et al. has been discussed in a previous rejection.

However, Tsuge et al. does not show the piston having plurality of balls and an inclined surface on the piston such that the balls press against the inside of the tubular member to limit movement of the piston in a single direction.

Wier (as shown in Figure 2) shows a piston having a plurality of balls (22) and an inclined surface (20) wherein the balls are then forced against the inside of the tubular member to limit movement of the piston in a single direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the piston of Tsuge et al. by providing a piston arrangement having balls and inclined surfaces that force the balls against the inside surface of the tubular member to limit movement of the piston in a single direction as taught by Wier so as to provide an efficient and effective piston for properly locking the seat belt and seat belt buckle and increasing the safety and performance of the seat belt pretensioner in operation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bets (USPN 5,481,940), WO 99/58377, Fohl (USPN 5,310,219), Chiba et al. (USPN 4,458,921), Grabowski et al. (USPN 5,944,350), Wang et al. (USPN 6,076,856), Bendler (USPN 4,444,010), Miller III (USPN 5,667,246), Koujiya et al. (USPN 5,762,372), Bauer et al. (USPN 6,039,353), Evans (USPN 6,113,145), Dukatz et al. (USPN 6,264,281), Evans et al. (USPN 6,374,609).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (703) 305-6495. The examiner can normally be reached on Monday to Friday 6:00-3:30 except alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (703) 308-2089. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-1113.

Gds *GS*
October 9, 2003

Eric Culbreth
ERIC CULBRETH
PRIMARY EXAMINER

10/14/03